THE Chemist

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THE AMERICAN INSTITUTE OF CHEMISTS, INC.

Vol. XXI March, 1944 No. 3

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The Chemist

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THE AMERICAN INSTITUTE OF CHEMISTS, INC.

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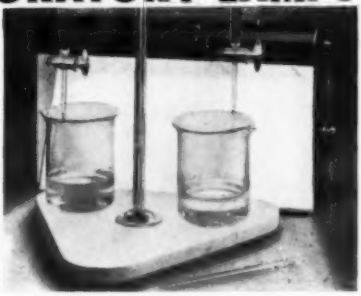

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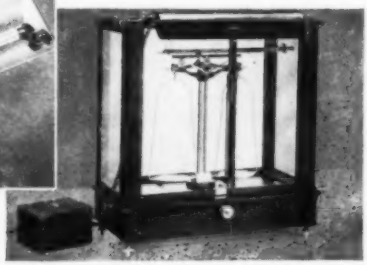

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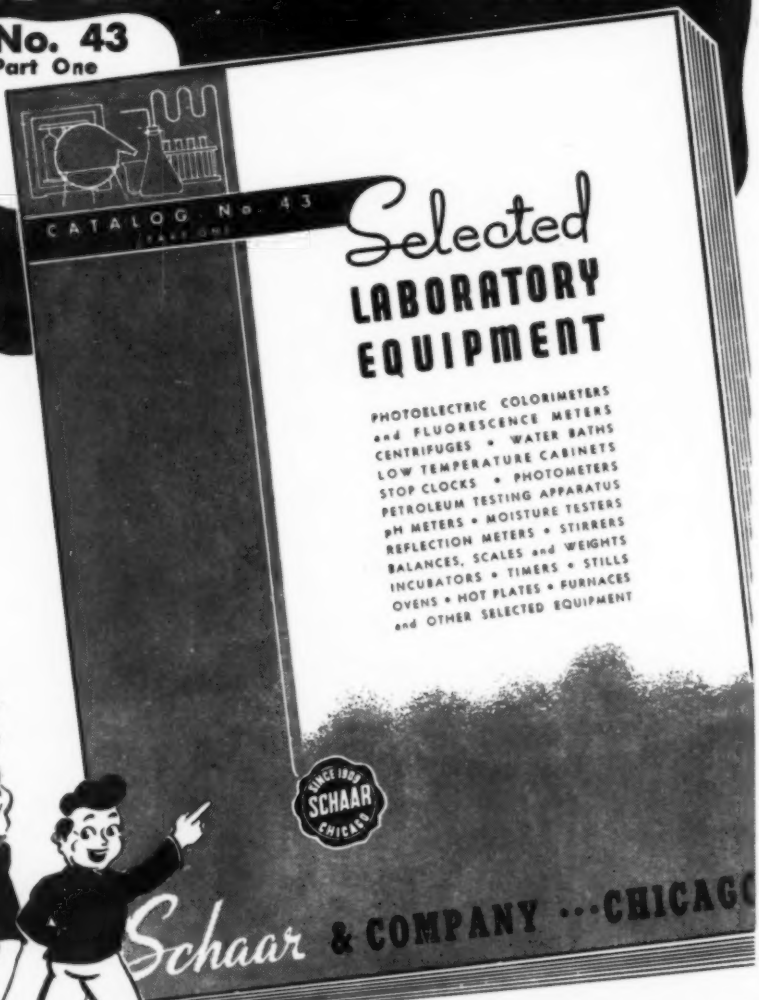

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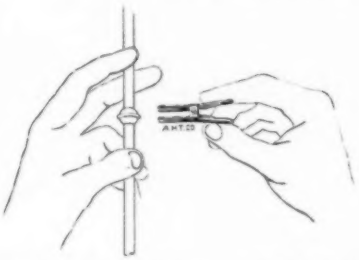

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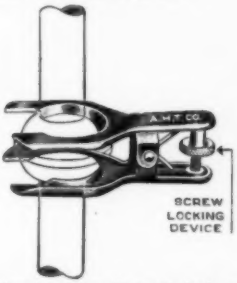

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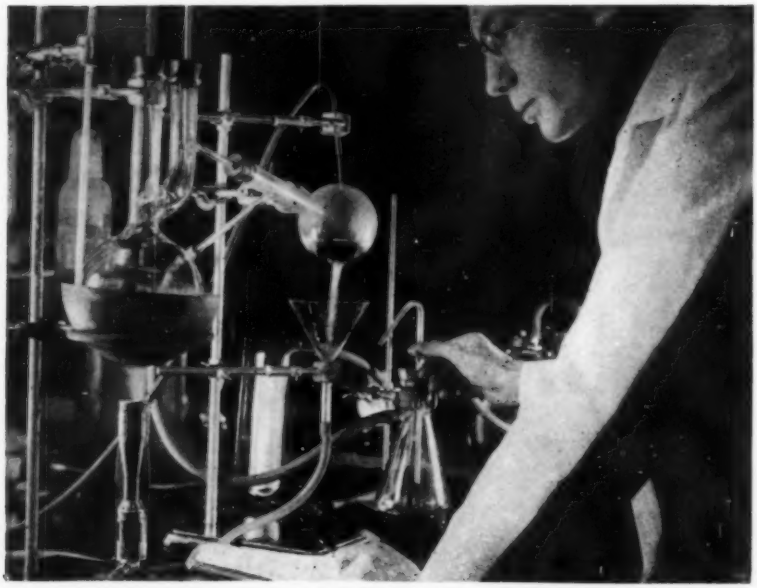

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The Professional Man

Ralph Thomas Walker

Architect, Voorhees, Walker, Foley and Smith. New York.
Former President. New York Chapter, American Institute of Architects.

MR. HAMLIN told me that The American Institute of Architects was a virile society, and that some idea of its nature and activities might be of value to you. I wondered why you wanted to hear other peoples' troubles, except that the problems of one professional society do parallel those of another.

The Institute of Architects was founded in 1857 for the purpose: "To organize and unite in fellowship the architects in the United States of America, to combine their efforts so as to promote the aesthetic, scientific, and practical efficiency of the profession; to advance education in architecture and in the arts and sciences allied therewith, and to make the profession of ever-increasing service to society."

The Institute began with fifteen founding members in New York City and it has now expanded to 3,768 corporate members. In addition we have state associations in twenty-one states which greatly increases our influence. There are said to be some 18,000 architects of all description in the country, of whom some 6,000 represent employers and 12,000 represent employees.

We have a code of ethics which covers such subjects as our trusteeship to clients, where we may act as a judge between the client we represent and the contractor we help to employ; competition with fellows — we decry competition among members on price and advertising. The practice of architecture is still largely in private hands, though there is a steady growth of civil service jobs, municipal, state and Federal government.

The Institute of Architects is organized into eighty-four chapters in ten regions. Our membership consists of corporate members, who are individuals; and state associations, which consist of state membership organizations of architects. An individual (corporate) member may be advanced to Fellow, if he has been a member for ten years and has notably contributed to the profession. This fellowship confers real distinction in the field. Provision is also made for Honorary members—those who have rendered distinguished service to the

profession. Honorary Corresponding Members are those who are not citizens of the United States, but who have distinguished careers.

The Institute functions through meetings and conventions to which delegates report, papers are read, and discussions take place. Regional meetings are also held, and the chapters conduct meetings on local matters. The eighty-four chapters are bound together by conventions and national committees. We also take part in legislative affairs, and support members in suits for the benefit of the profession as a whole. We are interested in education and in the improvement of public relations.

When the depression came, the national picture was changed considerably. The profession was used to prestige and the depression took the ground from under our feet. We were faced with a change in attitude on the part of the younger architects. Formerly, before the depression, the graduate architect had looked forward to having an office of his own someday. After the depression, interest arose in unionization, in working for civil service, in short in a search for security rather than for individual accomplishment.

I believe we will find in the future that there will be more architects working for civil service, and that from private enterprise to civil service there will be a greater socialization of our efforts. We have not worked out all the answers yet. The problems are too large. At least in the future we may be sure that we will have a more controlled world than at present.

In the national picture, we have to have a lobby in a world of lobbyists, and we employ the use of chapter relationships to bring pressure on government bureaus and legislative action.

We publish a monthly bulletin which gives opinions and information to our members.

Architecture is a changing profession. We face a changing world along with the men of all other professions. The architect is a human engineer. He provides spaces desirable for human living. Building is more technical now and it requires a high quality of technical competence. We also face a community problem in addition to providing individual homes, for the relation of the home to the community in which it exists must be considered. In cities we have the problem of slums and fine buildings in contrast to each other, and we must consider the individual picture, the larger community picture, and then the relation of the community to the nation.

There is a constant undercurrent of opinion that we technicians, we professionals, are marvelous in doing little things, but that our grasp, or or rather our concern, for the real qualities of living is such that added

up, one upon another, our accomplishments have meant chaos only.

After spending some time with Whitney, Langmuir, Coolidge of General Electric, and being interested in general research, Dr. Jewett was asked, "How is it that most scientists are men of one-track minds?", and he answered, "Scientists and scientific workers must not be confused." In each of our professions, even if we have to make compromises as individuals, we can take as groups the attitude of the larger social point of view.

The professional man, the cream of our educational system, is unfortunately an introvert. Not only you chemists, but engineers, architects, anybody who gets so interested in one field that community life is forgotten, are introverts. Our younger men are becoming extremely interested in the relation of the building to the community. I have great hope for the younger men in the professions.

A wise architect, old in years but young in living, said once that man's vocation was to live and to teach his children to live, and his avocation was to earn a living. Each of us individually is trying in a professional sense to improve the qualities of our work, but as it adds up collectively we fail to sell the people of the country things other than the headlines of our professional effort.

Not that I think you as chemists or we as architects have failed. You are magicians who, waving fairy-wands, bring new things into being. The old-fashioned idea of gaining wealth by changing lead into gold has changed to changing beans into new clarity, coal that stretches, milk and wood that makes warmth in new ways. You chemists engage the imagination. We look to you to open up a new continent where the intelligent mind gathers resources hitherto unknown. We architects, more conservative, are reluctant to change knowing that the hearths of man are kept going by our efforts. Central heating may warm blood and bones, but a fire on the hearth still strikes a responsive note in the heart of man.

Milton said, "I call therefore a complete and generous education that which fits man to perform justly, skillfully, and magnanimously, all the offices both private and public of peace and war."

In an economy of ease in achieving food, clothing, and shelter, the professional man should loom large. We need broad-minded folk in our society, and if as individuals we must earn our living, collectively, we should be conscious of the work we do in relation to public interest.

Stein with Kellex

Sidney J. Stein, A.A.I.C., formerly with the Amecco Chemical Company, Rochester, N. Y., is now chemist for the Kellex Corporation of New York.

WMC Revises List of Essential Activities

A revised list of essential activities has been released by the War Manpower Commission, which includes all changes up to January 15th. The list is primarily designed for the use of the U. S. Employment Service and the Selective Service System in determining the essentiality of the worker's employment. Selective Service Boards will use it in reviewing requests for occupational deferment.

Process for Steam Conservation

A method for utilizing pressure cookers, used in the conversion of grains, so that steam may be conserved, has been developed by P. A. Singer at the Century Distilling Company, Peoria, Illinois, according to an announcement by the War Production Board.

In developing this process, Mr. Singer, who has relinquished all patent rights on the process to the government, said that he found that spent steam from one cooker may be used to heat another by introduction of the spent steam above the liquid and agitating the liquid. Direct introduction of the steam into the liquid, Mr. Singer, explained, is not required for heat transfer.

Thus it is possible to interconnect the cookers so that the cooling cycle of one cooker provides the steam for the heating cycle of another.

Institute to Meet in New York, May 13th

The Annual Meeting of THE AMERICAN INSTITUTE OF CHEMISTS will be held in the Hotel Biltmore, New York, N. Y., on Saturday, May 13th.

The Committee for arranging the program consists of Robert J. Moore, chairman; H. S. Neiman, Donald Price, M. L. Hamlin, L. W. Davis, and H. F. Wakefield.

The program will be announced in the April issue of THE CHEMIST.

Laboratory Equipment Rules Relaxed by OPA

The War Production Board has permitted an increase in production of the three most needed classes of test instruments, and the number of critical classes of instruments has been reduced from seven to three.

Lederle Producing Vaccine for War Effort

In collaboration with the American Red Cross, Lederle Laboratories, Inc., New York, is making vaccine for protection against typhus fever. Success in this project is helping to protect the American Armed Forces now fighting in Italy.

Cosmetic Materials' Shortage Solved by Chemists

H. Hilfer

Research Chemist, Lehn and Fink Products Corporation, Bloomfield, N. J.

(Reprinted through courtesy of Drug and Cosmetic Industry.)

THE war has caused manufacturers to become ingenious in devising ways of manufacturing their products when their raw materials are curtailed. Shortages of raw materials probably have hit the cosmetic manufacturer harder than any single group, because cosmetics are all too often regarded as luxuries. He, therefore, has had to depart from the usual methods of packaging in order to keep producing at all. Drastic curtailment of materials considered the "backbone" of his industrial existence has forced him to reformulate his products in such a way as to remain acceptable to the consumer.

Packaging difficulties forced him from metal to plastics to glass. Rouge compacts normally pressed on metal discs or into metal cups are now being pressed on to fabroid discs. Makeup in cake form has had to be pressed directly into their containers or into plastic cups instead of into metal cups.

This presented a mechanical problem to which the existing equipment (it being impossible to buy new equipment) had to be adjusted since the plastic cases varied somewhat in their size while the metal cups were always uniform. In conjunction with these packaging changes, reformulation was sometimes necessary because of the incompatibility of the original formula with a new type of container, causing swelling or warping.

The shortage of alcohol and glycerine has perhaps caused more sleepless nights than most people can imagine. These materials were used in hand lotions, tooth pastes, toilet waters and other products representing a large dollar volume. In overcoming the problems presented by their curtailment, the cosmetic manufacturer has the chemist and the larger producers of chemical specialties to thank, and he also owes a vote of thanks to himself for becoming flexible enough to take these changes in his stride.

New materials have been appearing steadily to replace those which are no longer obtainable. In addition synthetic substances have made it possible to produce his products in a different form. Sometimes substitution had to be made for the sub-

stitutes, but fortunately there has always been something available which did the job.

One of these, whose use has increased as a result of the alcohol shortage, has been the dispersing agents, of which there are many and varied types. Some are good emulsifying agents, others are so potent in their activity that they are capable of dispersing one immiscible liquid medium through another in molecular size and thus make it appear to be soluble. Advantage has been taken of this property to enable the producer to cut down drastically on the amount of alcohol used in colognes and toilet waters, since the dispersing agent causes the perfume oil to be distributed through the water vehicle as a seemingly clear, soluble substance.

Good examples of this type of compound are the "modified" mannitan mono esters, which contain an additional solubilizing group in addition to the free hydroxy radicals enabling them to exert so potent an effect on lipoids and other water immiscible compounds. The mannitan compounds have been curtailed insofar as the toilet goods industry is concerned, but substitutes are available to carry on their work.

Another means of incorporating perfume oils in an aqueous vehicle without the use of alcohol has been the cream cologne, where the essential oils have been incorporated as part of an emulsion. These products have received good reports from consumers and it is possible that they may retain their popularity after the alcohol shortage is no longer a problem. From a manufacturing standpoint these products are more difficult to prepare than the usual emulsified hand lotion, because essential oils are harder to emulsify and they contain a larger percentage of these compounds than the usual lotion.

Since the essential oils themselves vary so widely in their composition, each odor in itself becomes a distinct problem. A formula found to be suitable for one odor will not necessarily be suitable for another. In addition many of these oils contain fair sized amounts of free carboxylic acids, capable of combining with triethanolamine or other alkalis. This neutralization may break the emulsion, or if an excess of alkali is added to compensate for their presence, the entire character of the odor note may be changed. These characteristics must be investigated before a suitable formula could be made.

The shortage of glycerine has caused a large amount of work to be done on creams and lotions in which it was an important component. It is primarily used as a humectant and does a good job of slowing down the evaporation rate of the aqueous portion of the emulsion; but it also adds something to the apparent emollient properties of the product. Few sub-

stances by themselves were satisfactory substitutes, since they did not possess all the requisites of glycerine.

Sugar syrups, though they possess the required humectant properties are difficult to emulsify and other substances were not completely capable of replacing it. By using some of these substances, however, and making compensatory changes in the rest of the formula it was possible to produce the desired effect.

In one of the nationally distributed products glycerine was eliminated entirely and the alcohol cut down to compensate for the decreased drying time due to its absence. In addition a fatty oil was added to the formula to compensate for the decreased emolliency due to the absence of glycerine. There is a noticeable difference between this product and the one produced before the war forced these changes, but the primary effects are still obtainable, and it has not suffered on the market.

The tooth paste manufacturer was also confronted with a glycerine curtailment, in many cases the most important single component of his product. Most of the substitutes could not be used because of an undesirable taste, which could not be covered and complete changes in formulas had to be resorted to. The use of sugar syrups played an important part in this new development and seems to fit into the picture very well. Among others, apple syrup, something entirely new as far as the toilet goods manufacturer is concerned, was one of the materials proposed.

Castor oil was used in greater volume in hair dressings and in lipsticks. Because it is the only natural triglyceride containing a hydroxylated fatty acid, it is in a class by itself and, therefore, not replaceable by any other natural oil. Its high viscosity and solvent property for "bromo acids," the staining portion of the lipsticks, made it the backbone of most lipstick formulas. Its solubility in alcohol, a property which no other triglyceride possesses made it possible to use in hair dressings. When the use of this oil was curtailed complete changes had to be made in both these products.

Castor oil was difficult to replace in lipsticks. It was done by using synthetic compounds having free hydroxy groups and, therefore, capable of causing the "bromo acids" to produce a stain. Formula changes had to be made to compensate for the lower viscosity, but this was done and good results have been obtained. Manufacturers have had to resort to the use of paper containers but they have been asked to continue to produce the contents without too great a slowing of production.

The hair dressing producer had both his primary raw materials cut off — castor oil and alcohol — and, therefore, had to turn to a new type of vehicle. He is now producing a

hair dressing in an emulsion form. Instead of castor oil he is using mineral oil and instead of alcohol, water. The product is similar to the emulsified lotions and consists of a triethanolamine stearate emulsion of mineral oil in water.

One of the popular products now on the market contains approximately twelve per cent of mineral oil, approximately the amount of castor oil used in the hair dressing solution, and may be applied in the same manner as the more conventional type, giving equally good results, producing much the same effect on drying. These hair lotions promise to retain their popularity after the war and to assume a permanent place in the cosmetic line.

The current trend in the beauty shop seems to be toward the so-called "cold wave" and away from the machineless permanent. This tendency was apparent before the war but was given a swift impetus by the cutting down of the supply of exothermic chemicals. The permanent wave depends on a partial degradation of the hair molecules, usually produced by heat.

The heat was supplied either by the use of electrically heated pads or by the use of some other means of heat application. The exothermic pad was extremely popular with the beauty shop operators because the pad simply had to be wetted and then applied to the hair. The introduction of moisture to the pad started a chemical reaction, accompanied by the generation of heat. By proper control in formulation, it was possible to control the amount of heat produced and also the period of time over which it was generated.

Attempts have been made to obtain the same effects insofar as the action on the hair was concerned by the use of straight chemical degradation without the accompanying heat. None of these "cold waves" came into general use until after the war started and most exothermic chemicals became critical materials. Beauty shop suppliers began to concentrate on methods for "cold wave" application and at present, I am informed that beauty shop operators are very enthusiastic about its use.

Salts of thioglycolic acid have come into use within the past ten years as depilating materials. Depilation by the means of these agents is due to their properties as reducing agents in common with other mercapto compounds. They were popular in this regard because there was no accompanying odor of hydrogen sulfide, identified with the use of the metallic sulfide depilatories.

In the depilatory the thioglycolate is allowed to react with the hair molecules until the degration has caused the hair to split from the root. However, it is possible to control the reaction so that it will not proceed beyond the point at which the hair be-

gins to curl. This is essentially the principle of the cold wave. Thioglycolic acid salts are not the only substances used for the purpose but the theory is pretty much the same.

I have been informed that this method of hair waving is in many respects superior to the older heat treatments, because the hair is softer as a result and the operator is more apt to be able to avoid the straw like appearance which is sometimes produced, particularly on fine thin hair.

This new method promises from all present indications to not only keep going after the war but to supersede the present one completely.

None of the developments mentioned in this article came as a result of "pulling a rabbit out of a hat." It represents long hours of painstaking study and experimental work. When one considers that most manufacturers expect a shelf life of at least a year from their products, a proper time interval is necessary for testing before marketing. There have been cases where changes have been made in too great a hurry and with bad results, but when one considers the little warning given most manufacturers before a necessary raw material was taken away from them, I think they did a good job. The slogan "The difficult we do today, the impossible takes a bit longer," may aptly be applied to the cosmetic manufacturer.

Curme Awarded Gibbs Medal

George O. Curme, Jr., vice president and director of research of Carbide and Carbon Chemicals Corporation, New York, has been awarded the Willard Gibbs Medal of the Chicago section of the American Chemical Society for 1944.

George B. Pegram, dean of the graduate faculties and chairman of the Committee on war research, at Columbia University, spoke on "War Research at Columbia" before the Alumni Day Luncheon held at the university February twelfth.

Dow and Rafferty Awarded Honorary Degrees

Willard H. Dow, president of the Dow Chemical Company, and James A. Rafferty, president of Carbide and Carbon Chemicals Corporation, were awarded honorary doctor of engineering degees by Illinois Institute of Technology, February twenty-first, at its fiftieth anniversary convocation.

Celanese Chemical Formed

Celanese Chemical Corporation has been organized by the Celanese Corporation of America to handle sales of the various chemicals manufactured by the Celanese plants.

Committee on Pan American Relations

THE AMERICAN INSTITUTE OF CHEMISTS has formed the following Committee on Pan American Relations: Frederick A. Hessel, chairman; E. L. Luaces, William L. Prager, and John A. Steffens.

Interest has been expressed by Dr. C. E. Nabuco de Araujo, Jr., *Chimico Analysta e Industrial*, Rio de Janeiro, Brazil; the Canadian Institute of Chemistry, and the Department of State, Washington, D. C., in the formation of a society for the exchange of scientific and professional information among chemists of the New World. The Committee will study the possibilities of such Pan American collaboration and prepare recommendations.

Mexican Chemical Convention

Scientists representing all branches of chemistry in Mexico will meet in Mexico City, March 27-30 for their second annual national convention. The congress is sponsored by the Ministry of National Economy and is open to accredited chemists from leading industrial establishments, chemistry schools, and scientific institutions.

Tax-Free Research Requested in Britain

The preliminary investigation and development costs of new research processes should be tax-free in Britain, according to a memorandum by the Parliamentary and Scientific Committee submitted to the Chancellor of the Exchequer. The memorandum was based on the idea that no industry can maintain its competitive position unless it devotes adequate effort and money to scientific and industrial research, and that this is particularly important to British industry, in view of the conditions which will confront it after the war.

The memorandum urged that every impediment to the undertaking of scientific and industrial research by British industry should be removed, and that the present treatment of this expenditure for the purpose of taxation is a deterrent to research, because some of it is not permitted to be deducted as an expense, and because there is uncertainty whether any proposed expenditure will be allowed as an expense deduction.

Felton Chemical Company of Brooklyn, New York, recently opened a branch in Mexico City, in charge of J. Alvarado Lang, a chemical engineer of the National University of Mexico.

What is a Chemist?

Ivor Griffith, F.A.I.C.

President Philadelphia College of Pharmacy and Science

[Reprinted in part from *American Journal of Pharmacy*]

THE public, since the world war, has become actually chemist conscious. What that profession lacked in legal definition and security it has engendered for itself in public esteem, and appreciation, by the sheer force of propaganda and education. And none of this has been ballyhoo. The chemist has sold himself on performance. . . . His fuels have annihilated distance, his medicines bring surcease from pain, and he feeds us and clothes us with creations of his queer alembic.

No wonder the public regards him as the oracle of oracles!

But wait — there is an Ethiopian hidden in the cellulosic pile!

To explain this circumstance, it might be well to deliberate over the very moot question as to "what constitutes a chemist." And the perversities of time and place must regulate our reactions and temper our findings.

Thus in the British empire a chemist may be regarded as one who deals in drugs or chemicals, an apothecary, a pharmacist — and indeed this was the chemist of another era. The term is a verbal heritage, which in quaint English custom has been preempted and preserved by the corner apothecary because it reflects a certain trade advantage. Of course the real chemist in England is just as real as he is anywhere else, that is, if he is real at all.

Someone asked me the other day why we no longer developed truly great chemists such as had glorified science in the nineteenth century, men like Pasteur, Perkin, Hoffmann, Faraday, Lavoisier, Scheele, and others.

My answer to him was that where once a good chemist grew now grows a million, many of them great and good, and others neither. I also referred my questioner to a paraphrased part of Owen Meredith's *Lucille*—

"The age is gone o'er

When a man may in all things be all.

We have more

Analysts, synthesists, and physicists, no doubt

Than Old Trismegistus gave birth to.
But out
Of a million or more dilettanti, when, where
Will a new Avogadro arise in our ken.
He is gone with the age which begat him.
Our own
Is too vast, and too complex, for one man alone
To embody its purpose, and hold it shut close
In the palm of his hand. There were giants in those
Irreclaimable days; but in these days of ours
In dividing the work, we distribute the powers.
Yet a dwarf on a dead giant's shoulders
Sees more
Than the live giant's eyesight availed to explore."

But the real chemist, of whenever and of wherever, is essentially a fundamentalist, dedicated to truth, whose equations must balance, whose formulas must formulate, whose imagination is forever tandem with fact, for whom search is not enough, and research never finished; who earns the confidence of atoms, and trains molecular mobs to do his every bidding. He wrecks, with system, one of Nature's jobs, and with the parts so gained, builds a bigger, better, more belonging building. Such is the real chemist of any time and place.

But in this day and generation, when so much is that is not, and so much is not that is, there are those who claim the title "chemist", who have neither an ethical, nor certainly a legal right to such a designation. For, *legally*, there is no recognition accorded the term "chemist".

His is the only footloose profession, regulated by no laws, handicapped by no arbitrary board of examiners, open to all comers with or without degrees, and with neither pull nor politics needed to earn the coveted title of chemist.

An aluminum pan, an egg beater, a few measuring devices, some wax, nujol, 20 mule team borax, and plenty of water and perfume, and the kitchen becomes a laboratory — and the kitchen cynic a full-fledged cosmetic chemist.

Such indeed was the modest start of many of our now snooty and distinguished cosmetic chemists and manufacturers.

Some, without the knowledge of drugs or drug therapy, have happened upon a formula, somewhere in a book, and with the compounding of it, without reason or rhyme, they have become self-appointed pharmaceutical chemists.

One has to plumb for years in order to become a registered plumber, and pounds of hair and whiskers must be piled upon the tonsorial altar before the apprentice becomes

a state-accepted barber. The elevator man and the waiter in the restaurant are responsible to the law for their jobs, but not so the chemist. For in the eyes of the law, a man becomes a chemist by a very simple formula — and that is, by declaring himself one.

After such declaration, everything of course will be held against him, and where the law has been lenient with his qualifying, life may be much less generous.

I could, without fear of the law, or of the C. I. O. let my hair grow long and greasy and label myself a poet or a piccolo player, but let me try to make a living at it.

By the same token I challenge any untrained chemist today to keep abreast of progress in his field, or to earn for himself a decent livelihood, for despite a lack of organization in the profession, and perhaps because of governmental unconcern with respect to their legal status, the real chemists are giving the world today the most concentrated material impetus that the little planet has ever known.

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Reu Promoted by Hercules

A. H. Reu, acting plant manager of Hercules Powder Company's Brunswick, Georgia, naval stores plant, has been named manager, according to an announcement from A. E. Forster, general manager of the Naval Stores Department.

Explosives Equipment Converted

The conversion of equipment previously used for the manufacture of smokeless powder into a unit for the production of DDT (dichloro-diphenyl-tricloro-ethane), a powerful insecticide, has been announced by Hercules Powder Company's Parlin, New Jersey, plant. The section of the plant being converted was closed last December because the British no longer needed the smokeless powder, and the conversion is being made at the government's request. The entire output of the insecticide, on which production will begin in May, will be taken by the armed forces. Among other pests, DDT is particularly effective against the carriers of typhus fever.

Browne to Receive Medal

The 1944 Nicholas Appert Medal of the Institute of Food Technologists will be presented to Dr. Charles Albert Browne, U. S. Department of Agriculture, Washington, D. C., at the annual meeting of the Institute to be held in Chicago, May 29-31. The award is made for Dr. Browne's outstanding contributions to food technology, particularly for his researches on sugar technology.

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Glyco Products Company, Inc., Brooklyn 2, N. Y., has issued a new catalogue, "Chemicals by Glyco", which may be obtained on request from the company.

Postwar Kaleidoscope

Maximilian Toch, F.A.I.C.

[Reprinted through courtesy of *The Philadelphia Inquirer*]

A FEW months ago, Dr. Karl T. Compton, president of the Massachusetts Institute of Technology, was bold enough to predict some of the wonders which will be unfolded in the post-war world. "They should lift men as far above the Steel Age," he commented, "as the Steel Age lifted us above the Bronze — if not farther."

Unfortunately the story of numerous fascinating and vital developments in wartime chemistry in the United States will have to await the dawn of peace. All that can be reported at this time is a tantalizingly inadequate sequence of observations. In taking a swift glance at some of our recent technological developments, the field which appears to have made the most striking progress is synthetic rubber. We should have an annual capacity of over 800,000 tons of this product by the end of 1944 — more than we ever have used in a normal year.

The baffling task which will confront chemists in this industry will be to devise ways of using the great world surplus which will pile up when peace comes. With the return of the Far Eastern plantation to their former owners, about 1,700,000 tons of natural rubber should again be available from all sources.

A discussion of prospective surpluses brings us to a consideration of the light metals. Because of the vastly expanded capacity of our aluminum reduction plants in wartime, many observers have felt that a serious problem will confront this industry. Other experts are inclined to be less pessimistic, however. They point out that if aluminum producers can sell 500 pounds of their metal for each post-war automobile manufactured (which is not beyond the realm of possibility), there will then be no peacetime surplus. Among the many future uses predicted for aluminum are doors, engine castings and rear-axle assemblies for automobiles; railroad hopper cars, household furniture, window frames and screens, lifeboats and ship superstructures. Aluminum is quickly corroded by sea water, but the use of chromate alkyds for anti-corrosion is quite successful. Masts, decks and housing will weigh

so much less that larger, lighter and faster ships will be possible. It is interesting, in passing, to recall that aluminum sold for $545 per pound in 1852!

One industry in which none of us fears a surplus is petroleum products. A great debate is currently being staged by experts in this field, some gloomily predicting that our oil reserves may be nearing exhaustion in twenty years or less, at present rates of consumption. Much encouraging progress has occurred in the improvement of engine fuels, the commercial production of Triptane being particularly noteworthy. This newest of the high-octane gasolines unquestionably will permit the design of much lighter and cheaper engines for postwar automobiles. Commenting on Triptane, Dr. Charles M. Stine of the du Pont Laboratories recently observed: "Since automobile production stopped, the shiny new models that are gathering dust in dealers' showrooms have aged technically at least twenty years."

In the matter of home insulation, the Goodyear Rubber Company has announced a new material, made of a cotton-light synthetic resin. It is claimed that two inches of this type of insulation will be sufficient for the new plywood-exterior portable houses being designed for post-war production. They also have made another remarkable contribution to industrial production with a new adhesive, known commercially as Cycleweld. Developed in collaboration with technicians of the Chrysler Motor Corporation, it is expected eventually to replace riveting and spot-welding altogether on light metals, particularly aluminum. The composition of the product is a military secret at this time. It is a jet-black synthetic formulation which is sprayed or painted on the surface to be joined. Adhesion is produced by heat under pressure for fifteen minutes. Cycleweld produces a joint which is stronger, easier to build, and cheaper than riveting. It is being used in wing flaps and structural sections of airplanes; also for fibre and wooden gasoline tanks, as well as for hundreds of other aircraft parts.

Several large firms are planning to enter the field of gas air-conditioning after the war. Units already designed will provide heat in winter, cooled air in summer, and all-year-round ventilation.

After the war, sensational improvements in photography will be announced. Lenses are being made at present which are much faster than the best we had up to 1940. They are made by substituting for several components the rare earths, whose composition is known to a few scientists, but cannot now be revealed. Color photography also has entered a new phase.

A distant post-war possibility is the perfection of pigmented steels, for

use in refrigerators, washing machines, kitchen ranges and other household appliances. Also, there has been some talk of stainless steel roofs.

The war has taught us numerous lessons about the use of color. For example, many industrial plants have inaugurated the practice of painting their cement floors white or ivory. Greatly improved light reflection has resulted, and the spirits of the workers likewise have been raised. Another recent practice has been the painting of certain parts of industrial machines in bright colors to contrast with the body of the machines. This technique has reduced accidents and speeded production. The use of yellow in place of red as the standard color for danger is also being advocated in some quarters It is recognized, of course, that red falls short of requirements because it lacks visibility. Yellow has been proven to be the most conspicuous and visible of all colors. Next, in order, are yellow-green, orange, and then red.

A striking glimpse of the growth of the plastics industry was furnished recently, with the publication of statistics estimating the total sales in the United States for 1943. This report showed that the figure would approximate a half billion dollars, which is sixteen times the output a decade ago.

Another industry which expects to be a strong contender in the post-war race is glass-making. Glass has been displacing steel and wood in kitchen cabinets, stoves and refrigerators. Glass will be used for roofing shingles, dance floors, oven doors, food hydrators.

Completion of the first all-plywood home in the United States recently focused attention on the coming importance of this material for a myriad of post-war applications. Current technique, involving electronic heat treatment of the synthetic resin-impregnated plywood, is producing a material which resists mild acids, fire, salt-water, and the actinic sun rays.

Nylon To Be Runless

Hilton Ira Jones, F.A.I.C. predicts that Nylon hosiery will be runless after the war. The Nylon threads, knitted into stockings, when stretched slightly over a hot cheesecake form, will weld together wherever they cross. At the present time, in addition to its other war uses, Nylon has been found ideal in the form of rope to lift gliders into the air.

Wetherbee With American Resinous

Burt Wetherbee, F.A.I.C., has joined the American Resinous Chemicals Corporation, Peabody, N. Y., as technical service manager. He was formerly affiliated with Globe Woven Belting Company, Buffalo, New York.

Necrology

Leo Hendrik Baekeland

Dr. Leo Hendrik Baekeland died at his home in Beacon, New York, February 23rd. He was eighty years old.

Born in Ghent, Belgium, Dr. Baekeland was the youngest student ever to enter the University of Ghent, being graduated *maxima cum laude* at seventeen. He became a Doctor of Science at twenty-one, and in 1889 he was associate professor at the university. Winning among other prizes, a traveling scholarship in chemistry, he visited England, Germany, and Scotland and then came to the United States.

Dr. Baekeland joined a New York concern manufacturing photographic films and paper and in 1899, he developed velox, a photographic printing paper. He subsequently formed the Nepera Chemical Company to market his invention. He then sold the Nepera Company to the Eastman Kodak Company for a sum approximating one million dollars. Following the sale of the Nepera Company Dr. Baekeland established a laboratory in Yonkers, New York, and after years of research emerged in 1906 with the development of a product, having as its constituents phenol and formaldehyde, which he called Bakelite. Four years later he founded the General Bakelite Company, later the Bakelite Corporation, to exploit his new discovery, and this created the new industry responsible for the manufacture of thousands of plastic items ranging from billiard balls to insulation for battleships.

Dr. Baekeland also aided in developing the Townsend electrolytic cell for producing caustic soda and chlorine from salt.

During the World War Dr. Baekeland was a member of the United States Naval Consulting Board and turned over many plastic products to war industries. He was a member of the advisory board of the chemical division of the United States Department of Commerce and chairman of the committee on patents of the National Research Council. He retired as the president of the Bakelite Corporation in 1939, when the company was purchased by Union Carbide Company.

He was the recipient of many awards and medals including the first award of the Chandler Medal for chemical research, the pioneer trophy of the Chemical Foundation, and the grand prize at the Panama-Pacific Exposition in 1915. He was decorated an officer of the Legion of Honor of France, the Order of the Crown of Belgium and was a commander of the Order of Leopold.

He was the first Chandler lecturer at Columbia University on the occasion of the fiftieth anniversary of the School of Mines in 1914 and was an honorary professor of chemical engineering at the university since 1917. He was United States delegate to the International Congress of Chemistry in 1909 and was president of the Inventors' Guild, the American Institute of Chemical Engineers and the American Chemical Society in 1924.

James Brodbeck

Dr. James Brodbeck, president and chairman of the Society of Chemical Industry in Basle, and first president of Ciba Pharmaceutical Products, died February twentieth in Gstaad, Switzerland, at the age of sixty-two.

William George McCallum

Dr. William George McCallum, who retired in 1943 after twenty-five years as professor of pathology at Johns Hopkins University Medical School, Baltimore, Md., died in Baltimore February third. He was sixty-nine years of age.

Born in Danville, Ontario, Dr. McCallum was graduated from the University of Toronto and obtained the medical degree at Johns Hopkins. He was a pathologist at the school until 1909, when he went to Columbia University as professor of pathology, remaining there until 1917, when he was named to the chair of pathology at Johns Hopkins.

Increased Social Security Recommended

A national social insurance system is recommended by the Social Security Board in its annual report for the fiscal year 1943. Such a system would provide compensation for unemployment, sickness and disability, old age, death, and part of hospital and medical expenses. It would require a contribution rate from employers of six per cent, the rate now scheduled to begin in 1949. From employees the three per cent rate now scheduled for 1949 would be raised to six per cent.

OPA Directory Available

A new Directory of Commodities and Services covering information about Office of Price Adminstration regulations and a list of key persons in operating units, has just been issued. Copies of the directory and six supplements, which will be issued between now and August first may be obtained for $1.00 from the Superintendent of Documents, Washington 25, D. C.

Plan to attend Annual Meeting May 13, 1944

COUNCIL

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Vice-president, Donald Price
Secretary, Howard S. Neiman
Treasurer, Frederick A. Hessel

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Miami Valley
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Louisiana
Harold A. Levey

February Meeting

A meeting of the National Council of The American Institute of Chemists was held on Tuesday, February 8, 1944, from four to six p.m., at The Chemists' Club, 52 East 41st Street, New York, N. Y., with Dr. Gustav Egloff presiding. The following officers and councilors were present: Messrs. G. Egloff, H. L. Fisher, F. A. Hessel, D. B. Keyes, R. E. Kirk, R. J. Moore, J. M. McIlvain, H. S. Neiman, D. Price, F. D. Snell, A. L. Taylor, and M. Toch. Mr. T. S. McCarthy and Miss V. F. Kimball were present.

The minutes of the previous meeting were approved. Upon motion made and seconded, the Treasurer's report was accepted.

The Committee on Annual Meeting reported that the meeting would be held Saturday, May 13th, at the Hotel Biltmore, New York, N. Y.

Dr. Kirk, chairman of the Committee on Unionization presented a tentative report and asked for suggestions. It was decided that the

Committee should revise this report after all Chapter comments have been received, and publish it in THE CHEMIST with the statement that comments from the members are ardently solicited; that the Council is obtaining legal advice as to what the Institute's position should be in the matter, and that this subject will be brought up at the Annual Meeting for discussion. Upon motion made and seconded, the Council authorized the publication of this tentative report of the Committee on Unionization.

Dr. Toch reported for the Committee on Licensure that arrangements were being made to meet with proper officials in New York State for consideration of the licensure bill. Discussion of the general situation on licensure followed.

Dr. Egloff announced that the following Institute members had been designated as delegates to the meeting of The American Academy of Political and Social Science on April 14-15: Dr. Albin H. Warth, Dr. Lewis F. Rader, Jr., and Dr. Arthur Osol.

Dr. Egloff announced that the State Department was interested in the possible establishment of an inter-American Chemical Society. Previously Dr. Nabuco de Araujo, Jr., of Rio de Janeiro had encouraged the establishment of a Pan American Chemical Society for the exchange of scientific information. The Canadian Institute of Chemistry has also expressed interest in such a society.

Upon motion made and seconded, the following Committee on Pan American Relations was established: Dr. Frederick A. Hessel, chairman; E. L. Luaces, W. L. Prager, and J. A. Steffens.

A letter of appreciation was read from Dr. Edmund Burke, who had previously been elected to Life membership.

The present status of the Kilgore Bill was discussed.

Dr. Egloff reported that he had talked at the Niagara Chapter of the Institute, and that one of the subjects discussed was contracts for chemists, particularly with reference to the post-service indenture clause which is contained in some contracts. During the brief discussion, it was suggested that chemists sign such contracts under protest.

Upon motion made and seconded, the application of Institute members in Western Pennsylvania for a charter for a Chapter, to be known as the Western Pennsylvania Chapter, was granted.

Further discussion took place regarding the licensure of chemists, and it was decided that this would be an opportune time to present the matter to the other societies for cooperative action.

Upon motion made and seconded, the following new members were elected:

Fellows

Altieri, V. Joseph
(1944), *Chief Chemist*, Eastern Gas and Fuel Associates, Rober Street, Everett 49, Mass.

Belchetz, Arnold
(1944), *Director of Research and Development*, Stauffer Chemical Company, 420 Lexington Avenue, New York, N. Y.

Chapman, A. Watson
(1944), *Assistant Technical Supervisor*, The Celotex Corporation, P. O. Box 26, Morrero, Louisiana.

Chason, Alvin L.
(1944), *Chemist*, The Coca Cola Company, P. O. Drawer 1734, Atlanta, Georgia.

Choppin, Arthur R.
(1944), *Professor of Chemistry and Assistant to Dean*, College of Chemistry and Physics, Louisiana State University, Baton Rouge, Louisiana.

Combs, Eugene L.
(1944), *Research Engineer*, Battelle Memorial Institute, Columbus 1, Ohio.

Cooney, Robert C.
(1944), *Research Chemist*, H. Kohnstamm and Company, 87 Park Place, New York, N. Y.

Goulding, John P.
(1944), *Chemist*, Calco Chemical Division of American Cyanamid Company, Bound Brook, N. J.

Henderson, Edwin B.
(1944), *Chief Petroleum Chemist, Dept. Weights and Meas.*, 501 New High Street, Los Angeles, Calif.

Hopkins, Ervin W.
(1944), *Head, Meat Research Department*, Armour and Company, Chicago, Illinois.

Matlack, Robert W.
(1944), *President and Technical Director*, George D. Wetherill and Company, Inc., Philadelphia 6, Penna.

McGrath, Joseph S.
(1944), *C.S.C., Head*, Department of Chemistry, University of Portland, Portland 3, Oregon.

Moore, John C.
(1944), *Superintendent Paint Plant*, Sinclair Refining Company, P. O. Box 516, Marcus Hook, Penna.

Nazzaro, Ralph T.
(1944), *Industrial Fellow*, Mellon Institute, Pittsburgh, Penna.

Parker, Robert P.
(1944), *Assistant Director, Organic Section*, Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J.

Price, John R.
(1944), *Chemical Engineer (Sales)*, Carbide and Carbon Chemicals Corporation, 30 East 42nd Street, New York, N. Y.

Rector, Philip R.
(1944), *Technical Division*, Carbide and Carbon Chemicals Corporation, New York, N. Y.

Reeder, Oliver H.
(1944), *Chief Chemist*, Baltimore Copper Paint Company, 501 Key Highway, Baltimore, Maryland.

Reilly, Edmund A.
(1944), *Chief Chemist*, Philadelphia & Reading Coal and Iron Company, Pottsville, Penna.

Roberts, Hayden
(1944), *Laboratory Director*, Halliburton Oil Well Cementing Company, Duncan, Oklahoma.

Robertson, Harold F.
(1944), *Manager of Development, Plastics Division*, Carbide and Carbon Chemicals Corporation, New York, N. Y.

Robinson, Helen M.
(1944), *Assistant Chemist*, U.S.D.A., Southern Regional Research Laboratory, New Orleans, La.

Spicer, Major Walter Eaton, Jr.
(1944), Chemical Warefare Service, 1614 Civic Opera Building, 20 North Wacker Drive, Chicago, Illinois.

Wackher, Richard C.
(1944), *Research Chemist*, Universal Oil Products Company, Riverside, Illinois.

Ward, Roland
(1944), *Assistant Professor of Inorganic Chemistry*. The Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

West, Philip
(1944), *Assistant Professor and Head of Division of Analytical and Industrial Chemistry*, Louisiana State University, Baton Rouge, Louisiana.

Members

Collins, George T.
(M.1944), *Chemical Engineer*, Pennsylvania Salt Manufacturing Company, Philadelphia, Penna.

Dormuth, Lawrence C.
(M.1944), *Chemist*, Pennsylvania Salt Manufacturing Company, Philadelphia, Penna.

Farley, Vincent
(M.1944), *Research Chemist*, Barrett Division of Allied Chemical and Dye Corp., 1 River Road, Edgewater, N. J.

McKim, Betty Louise
(M.1944), *Chemist*, University of Chicago, Department of Surgery, 950 E. 59th Street, Chicago 37, Illinois.

Weiss, Arthur
(M.1944), *Chemist-in-charge*, Fordham Hospital, Southern Blvd., and Crotona Avenue, New York, N. Y.

Associate

Klein, Howard C.
(A.1944), *Chemist*, National Oil Products Company, Harrison, N. J.

There being no further business, adjournment was taken.

Applications for Membership

For Fellow

Adams, Robert S.
Organic Chemist, Halliburton Oil Well Cementing Company, Duncan, Oklahoma.

Brady, Lynn J.
Industrial Fellow, Mellon Institute, Pittsburgh, Pennsylvania.

Brown, Raymond G.
Executive, Comstock & Wescott, Inc., Niagara Falls, New York.

Burkhart, Clarence W.
Research Chemist, Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia, Pennsylvania.

Clark, Lee H.
Plant Manager and Vice-President in Charge of Production, Sharples Chemicals, Inc., 4700 Biddle Avenue, Wyandotte, Michigan.

Cline, Edwin L.
Industrial Fellow, Mellon Institute, Pittsburgh, Pennsylvania.

Glaser, Elizabeth B.
Professor of Chemistry, Immaculate Heart College, 2021 N. Western Avenue, Hollywood, California.

Hazel, Wallace M.
Chief Chemist, Norton Company, Chippawa, Ontario, Canada.

Kammermeyer, Karl
Director of Chemical and Chemical Engineering Research, Publicker Commercial Alcohol Corporation, 1428 Walnut Street, Philadelphia, Pennsylvania.

Levitt, Leonard S.
Technical Representative, Glyco Products Company, Inc., 912 Morris Building, Philadelphia 2, Pennsylvania.

Robinson, Clark S.
Lt. Colonel, Ordnance Department, U. S. Army, 323 N. Michigan Avenue, Chicago, Illinois.

Schlissel, Morris
Chief Chemist and Plant Manager, Metropolitan Refining Company, Inc., 50-23 23rd Street, Long Island City 1, New York.

Seniff, Russel Wade
Chemical Engineer, The Alton Railroad, Bloomington, Illinois.

Sirota, Julius
Research Assistant, S. A. M. Laboratories, Columbia University, New York, N. Y.

Towle, Louis W.
Research Chemist, Apache Powder Company, Benson, Arizona.

For Member

Levin, Ernest M.
Analytical Chemist, National Bureau of Standards, Old Mint Building, San Francisco, California.

CHAPTERS

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2100 Robert E. Lee Boulevard
New Orleans 19, Louisiana

Council Representative: Harold A. Levey

THE first meeting of the newly-formed Louisiana Chapter of the American Institute of Chemists was held at the Jung Hotel on February 9th, at 8:00 o'clock. Harold A. Levey, acting chairman, called the meeting to order. The meeting was exclusively an organizational meeting. Officers were elected as listed above and it was decided that these officers should serve as an executive committee to act on matters which might come up so as to avoid calling special meetings of the Chapter. The chairman was charged with the duty of appointing committees and the Executive Council was instructed to prepare a constitution and by-laws for submission to the Chapter.

The remainder of the meeting was devoted to discussion of the objectives of the Institute and to the reading of letters from members who were unable to attend because of wartime conditions.

Los Angeles

Chairman, R. J. Abernethy

Secretary-treasurer, Imo Baughman Simpson
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Los Angeles, California

A meeting of the Los Angeles Chapter was held January 18th, at which N. H. Hubbard, assistant employment manager of the Lockheed Aircraft Corporation, gave a presentation of the problem facing professionally trained people selling their services in today's market. Mr. Hubbard felt that such workers have within their grasp a powerful tool for their own protection and that of the public by an affiliation of like groups. A broad educational program supported by large numbers was indicated as one of the first essentials.

The following meeting was announced for February 17th, with dinner at Clifton's, 648 South Broadway, Los Angeles. Plans for the spring activities will be prepared.

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Chairman, Glenn E. Ullyot

Secretary-treasurer, Kenneth E. Shull
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Bala Cynwyd, Pennsylvania

Council Representative, John M. McIlvain

A meeting of the Pennsylvania Chapter was held in Mitten Hall, Temple University, on Tuesday, January 25th.

At the close of an informal dinner the chairman, Dr. Glenn Ullyot, introduced Dr. Stanley P. Reimann, director of the Research Institute of Lankenau Hospital. Dr. Reimann spoke on "Chemical Differentiation of Cells as Illustrated by Endocrines and Tumors".

The talk consisted of a discussion of the development within cells of chemical laboratories which produce specific products such as saliva, thyroxin, and a host of others. Certain malignant growths produce hormones

of the same character as those which originate in normal glands. Thus by identifying the products made in the chemical laboratories within the cells it is possible in many cases to diagnose the presence of tumors.

Dr. Reimann's talk was well-illustrated with case histories; slides were shown of sections of tumors taken from the patients involved. Differences between normal cells and malignant growth were pointed out.

Washington

President, L. F. Rader, Jr.

Vice-president, L. R. Heiss *Treasurer*, T. H. Tremearne

Secretary, Ernest J. Umberger
207 Albany Avenue, Takoma Park, Maryland

News Reporter to THE CHEMIST, S. W. Griffin

Council Representative, T. H. Tremearne

For Your Library

TOXICOLOGY AND HYGIENE OF INDUSTRIAL SOLVENTS. Edited by K. B. Lehmann and F. Flury. *Williams and Wilkins Company*. 378 pp. 9″ x 6″. $5.00.

The publication in English of this work, which is generally acclaimed as the most detailed and useful book on the subject, will be extremely valuable in combating effectively what is probably the most widespread chemical hazard in United States industry, exposure to solvents. The contents of the book are predominantly of a medical nature.

However not only physicians but anyone who has any contact with industrial solvents will find it a source of information that is readily understood and applicable. Experimental-toxicological investigations form the nucleus of the book. They include studies of the hydrocarbons of the benzine and benzol series, the important chlorinated hydrocarbons, the alcohols, esters, etc., and the glycol group. Around these studies are grouped discussions of chemistry and technology, chemical analysis, skin injuries, and dangers to health and health protection.

The contents of this book will prove invaluable to every chemist whose activities lead him into the use of industrial solvents.

NATIONAL FIRE CODES FOR FLAMMABLE LIQUIDS, GASES, CHEMICALS AND EXPLOSIVES. *National Fire Protection Association.* 501 pp. 9″ x 6″. $3.00.

The National Fire Protection Association in the performance of its function of developing and making available information on the safeguarding of life and property against loss by fire has issued the results of its extended information in the book carrying the above-mentioned title.

The book contains not only the various State codes relative to fire prevention, but also contains a tremendous amount of valuable information relative to the proper use of hundreds of fire-operated mechanisms as well as detailed information regarding the proper storage of flammable materials.

Everyone handling chemicals of this nature should possess a copy of this book in order that they may avoid the loss of life and property through inadequate or improper means for handling the many solids and liquids mentioned in the book.

CELLULOSE AND CELLULOSE DERIVATIVES. High Polymers Series. Vol. V. Emil Ott, Editor. *Interscience Publishers, Inc.* 1176 pp. 9¼″ x 6½″. $15.00.

Under the editorial direction of Emil Ott, director of research of Hercules Powder Company, this volume consists of a series of contributions by thirty-five authors on cellulose and its derivatives, lignin and other non-carbohydrates, covering scientific and technical aspects.

It starts with the concept of fibrous cellulose as essentially a crystalline body shot through with submicroscopic faults, capillaries and disorganized localities containing incrustants, the pure cellulose consisting exclusively of glucose residues.

The monograph evolves logically with the occurrence of cellulose, its chemical nature, the structure and properties of cellulose fibers, associated carbohydrates, lignin, and other non carbohydrates. The preparation, bleaching and purification are followed by the chemical derivatives of cellulose and their properties, and a short chapter on technical applications.

The literature is thoroughly reviewed and incorporated into excellent expositions. The information is carried up to the exploratory front of present research. Some fields might have been more elaborately covered, but the intent of holding close to the high-polymer phases of cellulose and associated bodies has been consistent.

The book is a real contribution and will be valuable in any library which touches upon cellulose, cellulose derivatives or associated substances.

PRINCIPLES AND PRACTICE OF QUALITATIVE ANALYSIS WITH SEMIMICRO TECHNIQUE. By Paul E. Spoerri, Harold Weinberger, and Robert Ginell. *McGraw-Hill Book Company*. 1942. 282 pp. 6½" x 9¼". $2.75.

In the development of this book an excellent exposition of general chemistry and physical chemistry constitutes the first half of the volume. The use of a series of periodic tables to show the range of reactions in the usual scheme of qualitative analysis is a good aid to the student, though some of the theory is more elaborate than would appear necessary.

The description of the apparatus and technique as applied to qualitative analysis, macro or micro, is concise and clear.

The book is dedicated to Professor Raymond E. Kirk, F.A.I.C. whose sponsorship of a progressive move to associate more closely physical chemistry with analytical chemistry is laudable. It is a commendable attempt to break away from rigid, unthinking analytical procedure. In enlightened hands, this is an excellent textbook.

Plastics in Industry. By "Plastes". Chemical Publishing Company. 241 pp. 6"x8¾". $5.00.

To cover the field of plastics while the industry is still in the formative and developmental stage is difficult. This book yields a fair picture of British practice until 1940, and is definitely forward looking, suggestive, and constructively critical.

After a description of the plastics field, the materials used, specifications, and properties, and a description of moulding and fabrication technique is given. The applications of plastics to the various industries, chemical, electrical, aircraft, automobile, textile, building, furniture, fancy goods, packaging and display are well illustrated. Synthetic rubber is discussed briefly but with understanding. The chapter on design and the practical phases is excellent.

LUMINESCENCE OF LIQUIDS AND SOLIDS AND ITS PRACTICAL APPLICATIONS. By Peter Pringsheim and Marcel Vogel. *Interscience Publishers, Inc.* 1943. 201 pp. 6½" x 9¼". $4.00.

This book treats luminescence specifically for its practical applications by means of liquids and solids, but not gases. Subjects covered include the physics of luminescence; luminescent paints; fluorescent screens; fluorescent lamps; and a table of important fluorescent materials and their behavior on excitation. The language is occasionally a trifle obscure, but a fairly balanced presentation of the subject is made with a wealth of detail.

Supplement No. 1 to Vols. I and II of "A MANUAL FOR EXPLOSIVES LABORATORIES." By B. T. Federoff and George D. Clift. *Lefax Society*. 1943. 112 pp. $1.00.

This supplement contains additional material, corrections, and new methods to be inserted in the first two volumes of "Manual for Explosives Laboratories." Insertion is convenient since the manuals are made in loose-leaf form.

THE CHEMISTRY OF SYNTHETIC SUBSTANCES. By Dr. Emil Dreher. *Philosophical Library*. 103 pp. 8½" x 5½". $3.00.

This English translation of this highly recognized volume upon the high molecular organic compounds with special reference to the chemistry of synthetic compounds will prove of the greatest value to those chemists who are interested in the underlying principles of polymerization, and the processes incident to their condensation.

The book is replete with scientific information in regard to these processes with evident suggestions as to their adaptation to practical production.

This volume is a valuable addition to the library of every chemist interested in these newly developed high carbon synthetic substances.

SEMIMICRO QUALITATIVE ANALYSIS. By John F. Flagg and Willard R. Line. *D. Van Nostrand Company, Inc.* 1943. 140pp. 5¾" x 8¾". $1.50.

In those cases where only a small amount of material is available for analysis, or where the equipment and facilities are limited, a definite use for semimicro analysis occurs. The procedure of analysis is essentially the same as that of systematic qualitative analysis, except that small apparatus and special techniques with centrifuge, filter, pipettes, and reagents are required.

A good theoretical section constitutes the first third of this book. Special procedures are given for the analysis of the ferro-alloys and aluminum alloys. Some of the techniques described give the feeling that a little more detail would make them semi-quantitative as well. This book has distinctive features which make it a useful source of information.

The Spring issue of *The Chemical Digest*, published twice a year by Foster D. Snell, Inc., features articles on "Chemical Products for Post War Needs" and "Dream Houses of Tomorrow". Copies may be obtained on request to the publisher at 305 Washington Street, Brooklyn 1, New York.

Si-versation

Nick, the Cu, saw Albert, the In miner, come in over the door-Ag-y drunk, tip the Ge over in the window, knock the bar maid down and hold her with his Ne her head.

"Al too hard," said the Cu facetiously, but the miner B again.

"He not hurting her," said the In.

"Mn-y," admonished Nick.

"A, you make too much P," Albert retorted. "Ni you pull me up and Pb me to the bar?" he asked. "I-ah for a bottle of Au-en Ba. What does it S?"

"Sb enough to pay for it," said Dinah Fe-ically. "Lis-Sn, next time you stop and Zn before you raise Hail Cb."

—W. S. FROST.

For translation, please see below!

Silly Conversation

Nick, the copper, saw Albert, the Indian miner, come in over the door sill very drunk, tip the geranium over in the window, knock the bar maid down and hold her with his knee on her head.

"Al, you mine 'um too hard," said the copper facetiously, but the miner bore on again.

"Hell, I am not hurting her," said the Indian.

"Man, go easy," admonished Nick.

"Ah, go on, you make too much fuss for us," Albert retorted. "Nick, 'll you pull me up and lead me to the bar?" he asked. "I owe Dinah for a bottle of golden bay rum. What does it sell for?"

"Ain't money enough to pay for it," said Dinah ironically. "Listen, next time you stop and think before you raise Hail Columbia."

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Meeting Dates

Mar. 23. Baltimore Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Loyola College, Baltimore, Maryland.

Mar. 23. Washington Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Speaker: E. L. Luaces, president, Chemical Developments Corporation. "Patents and the Public Interest."

Mar. 23. New York Paint Varnish and Lacquer Association. Biltmore Hotel. New York.

Mar. 24. Niagara Chapter of THE AMERICAN INSTITUTE OF CHEMISTS. Hotel Westbrook, Buffalo, N. Y.

Apr. 2-5. American Ceramic Society. Hotel William Penn, Pittsburgh, Penna.

Apr. 3-7. American Chemical Society. 107th Meeting. Cleveland, Ohio.

Apr. 10. N. Y. Chapter, American Society for Metals. Speaker, J. C. Mathes, "Magnesium". 2 Park Avenue, New York, N. Y.

Apr. 12-15. Electrochemical Society. Milwaukee, Wisconsin.

Apr. 13-14. Midwest Power Conference. Palmer House, Chicago, Ill.

Apr. 14. Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. The Engineers' Club. Dayton, Ohio.

Apr. 14. New York Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Student Medal presentation. 2 Park Ave. 26th Floor. Speaker: R. M. Baker, Westinghouse Electric and Mfg. Co., "Electronics and Its Application to Research and Development."

Apr. 21-22. Federation of Paint and Varnish Production Clubs. Netherlands Plaza Hotel, Cincinnati, Ohio.

Apr. 27. Baltimore Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Loyola College, Baltimore, Maryland.

Apr. 29. Washington Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Election of Officers. Program to be announced.

May . Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. University of Cincinnati. Cincinnati, Ohio.

May 8. N. Y. Chapter, American Society for Metals. Speaker, A. A. Schawtrz, "Induction Heating." 2 Park Avenue, New York, N. Y.

May 12. New York Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Annual Business Meeting. 2 Park Avenue, 26th Floor, New York, N. Y. Speakers: W. S. Thornbill, Shell Development Company, "New Chemicals by Shell"; T. J. Thompson, Corning Glass Works, "Wartime Developments in Industrial Glass."

May 13. THE AMERICAN INSTITUTE OF CHEMISTS. Annual Meeting. Hotel Biltmore, New York, N. Y.

May 23-25. American Association of Cereal Chemists. Nicollett Hotel, Minneapolis, Minnesota.

May 25. Baltimore Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Loyola College, Baltimore, Maryland.

June . Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Ohio State University. Columbus, Ohio.

July 14. Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. The Engineers' Club. Dayton, Ohio.

Aug. 11. Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. The Engineers' Club. Dayton, Ohio.

Sept. . Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. University of Cincinnati, Cincinnati, Ohio.

Oct. 7. Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Business meeting. Dayton, Ohio.

Nov. . Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. Ohio State University, Columbus, Ohio.

Dec. . Miami Valley Chapter. THE AMERICAN INSTITUTE OF CHEMISTS. University of Cincinnati, Cincinnati, Ohio.

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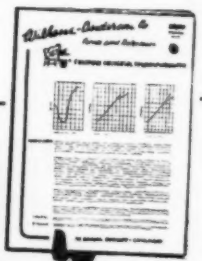

*See IND. & ENG. CHEM., Vol. 15, No. 8, p. 527, Aug. 15, 1943, "Quantitative Chemical Micro Determination of Twelve Elements in Plant Tissue" by H. Q. Parke et al., U. S. Plant, Soil & Nutrition Lab., Agric. Res. Adm., Ithaca, N. Y.

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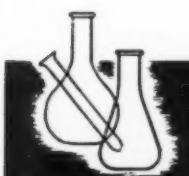

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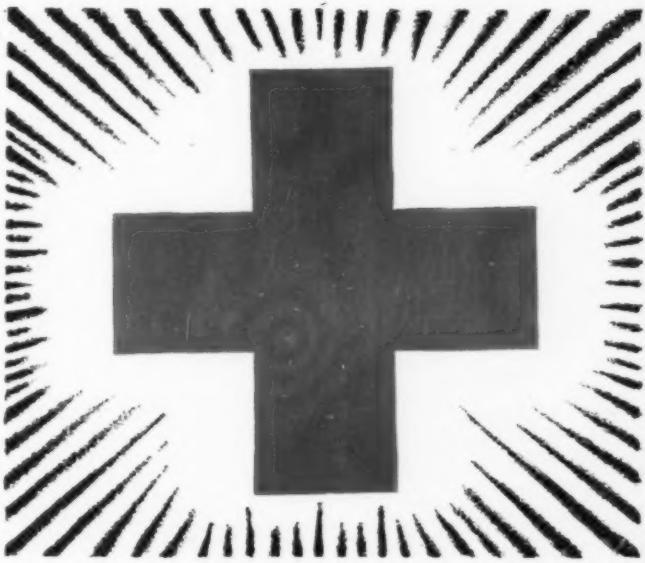

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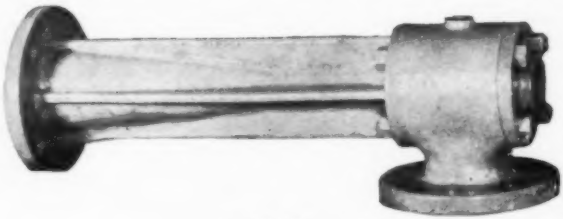

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